

The Heretic's Guide to Global Finance: Hacking the Future of Money

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Thursday, 17 July 2014

Breaching the monetary Matrix: Five exercises to help you understand money



(Note: I originally wrote this article for the July 2014 edition of [Contributoria](#), and it is republished here under the following [Creative Commons](#) licence. If you wish to use the article, please attribute the original)

"Like everyone else you were born into bondage, born into a prison that you cannot smell or taste or touch, a prison for your mind."

This is a line from ***The Matrix***. Morpheus is [explaining to Neo](#) that he's actually stuck in a nightmare prison-world enslaved to computers. ***The world is not as you think Neo, but I can set you free, provided you take the red pill.***

In some ways Morpheus resembles one of those single-agenda zealots who goes around telling people that they have a certain secret truth that will liberate them, like the guy who corners you in a pub and says, "Don't you realise we're trapped in a corporate prison. The Bilderberg Group owns the world's governments!"

Morpheus, however, is also different to the average conspiracy theorist. The key dynamic in ***The Matrix*** is that the power structure he's trying to reveal is invisible in all ways, an immersive totality that transcends the world of identifiable 'things'. He spins no tales of illuminati hiding in Goldman Sachs, or secret meetings between elites in Swiss cantons.

The problem with the average conspiracy theorist is that their targets – such as corporations – are too obvious. Corporations may be giant, semi-immortal entities that vaguely resemble autonomous hive-minds bent on cultural hegemony, but they often do it bluntly, pushing cheesy propaganda and brandishing gadgets at us, lobbying politicians, and so on. In the end, there are ways for people to exert influence over them, and they occasionally disintegrate. Corporate power is subtle, but not that subtle.

My book



"An imaginative, even exuberant exploration of the daunting world of finance" Bill McKibben, founder of 350.org

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About Me



Brett Scott

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I explore economic systems. I have a book called ***The***

Heretic's Guide to Global Finance: Hacking the Future of Money, published with Pluto Press. I've written for publications like the ***Guardian***, ***Wired***, ***New Scientist***, ***Ecologist***, ***New Internationalist***, ***Aeon Mag*** & ***openDemocracy*** and have appeared on shows such as BBC ***World Update***, BBC ***Newsday***, the ***Keiser Report***, and Arte TV. I've worked as a broker, barman and blues musician, and I'm a Fellow at the Finance Innovation Lab. I blog here and tweet as @Suitpossum.

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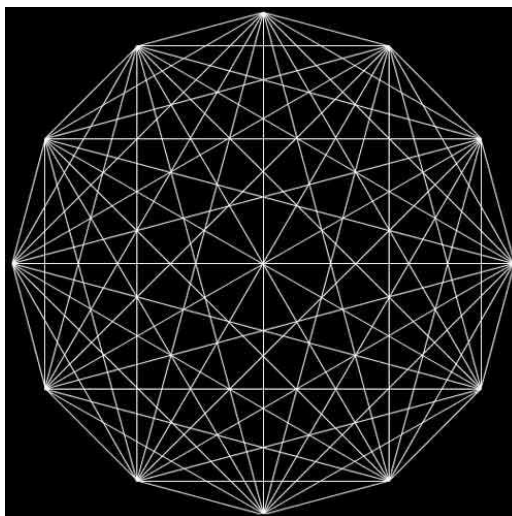


If anything in the world actually resembles Morpheus' conspiracy, I'd say it is **money** itself. Money is extremely subtle. We think of the monetary system like we think of air, or language – as something that surrounds us and that we take for granted. We are born into a monetary system we cannot smell, or taste, or touch, so obviously normal as to be virtually invisible.

Indeed, when we're asked to describe money, we often give fuzzy, imprecise descriptions, despite the fact that we may use it every day. Even those who work in the financial sector, and who spend all their time designing financial instruments like bonds to steer money from one place to another, frequently cannot tell you precisely what money is. Take, for example, the anti-hero of [The Wolf of Wall Street](#), a hotshot broker immersed in money, but who literally has no idea of what it is, and what's more, is controlled by it like a puppet.

I find money intensely mysterious, and there are no Matrix-style red pills that can be taken to help one deconstruct it. In August 2013 I published a piece called [Riches Beyond Belief](#) in Aeon Magazine, exploring the cultural dynamics of currency. Following that, it occurred to me that it would be useful to develop some more practical exercises and thought experiments to try stimulate thought about particular aspects of the monetary mystery. This article introduces five of those exercises, and I hope that collectively they may help you develop your own ideas. I've set them out in a particular order, but you can jump to those that interest you most.

Exercise No. 1: The web of value



This first exercise is a warm up, aimed at situating money relative to other goods. Look around you and try locate a few objects in your immediate vicinity. Perhaps you're sitting at a desk, and there is a decent Casio scientific calculator, a Parker ballpoint pen, a bottle of Jack Daniels, and an A4 note pad. You'll also need to have one foreign bank note, and one local bank note.

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The challenge, part 1

Pick two of the objects, for example, the calculator and the Parker pen. Your task is to work out a rough **exchange ratio** between them. How many pens is the calculator worth?

You don't have to work out an exact ratio, but aim to create a **band** of likely exchange ratios, testing the outer bounds of plausibility. The calculator is not likely to be worth 10 000 pens, for example, but it's probably likely to be worth more than 1 pen. Perhaps you say the calculator is roughly worth 4-7 pens, depending on the situation and their relative quality.

You'll note that you have an intuitive, almost subconscious ability to assess one object relative to another, even if it's only in very rough terms. What precisely is it about the objects that allows you to make the comparison? Perhaps it's their perceived **utility** (*'the calculator can undertake more complex actions than the pen, and it lasts longer'*), or perhaps it's the imagined difficulty in creating the objects ourselves (*'the calculator seems to have more complex technology built into it, and is harder to make, requiring more physical or intellectual labour'*). Perhaps it's just due to some learned perception of the value (*'Parker is a good ballpoint brand isn't it?'*), or some combination of those factors.

Now that you've established one exchange ratio, add another. How many note pads is your bottle of Jack Daniels worth? You will find that these exchange ratios fluctuate even with yourself, depending on what time of day it is and your mood or situation. That won't stop you being able to make a rough band though: ***'It's unlikely that I'll ever exchange a bottle of Jack Daniels for just one note pad, surely it's worth at least three, but I'd never exchange 200 note pads for a bottle.'***

Now create a third exchange ratio, perhaps between the ballpoint pen and the notepad. In doing this, you're building up a rough **network** of exchange values, and theoretically there should be some coherence between your perceptions. If roughly 4 good quality pens are exchangeable for a decent calculator, and roughly 3 standard notepads are exchangeable for a good quality pen, it is implied that roughly 12 standard notepads are equal to the calculator. Does that seem plausible to you, or do your perceptions of value have some inconsistencies?

(As a side note, you'll probably find that your perception of value gets warped by scale, leading to certain inconsistencies. The perceived utility of any object tends to diminish with increased scale, a phenomenon economists call 'diminishing marginal utility'. For example, you may be able to conceptualise the usefulness that three pens have to you, but it's probably difficult to conceptualise the usefulness of say, 3000 pens)

The challenge, part 2

Let's now assume you've developed a loose latticework, something like a spider's web, of these object pairs and the exchange ratios between them. Now take a **foreign bank note**, a currency that you're not used to using, and try to integrate it into the network. How many pens would you exchange for 50 Turkish Lira?

Notice something strange? We have some internal intuitive sense that guides us when making a rough comparison between two objects, but there is nothing about a foreign bank note that allows us to make a similar comparison. The truth is that you probably have no idea about how much a Turkish Lira is worth, unless you are from Turkey.

This is something that tourists frequently experience, holding a strange foreign currency in their hands, having little idea of what it should be exchangeable for. What actually happens when you are a tourist? You **learn** what the currency is worth by observing others and by experience. You slowly **calibrate** your sense of its worth by seeing examples of goods priced in it.

Now, by way of contrast, take a currency you're familiar with, perhaps the British Pound, and integrate it into the network. You'll find that you already have a set of **pre-established** ideas about the exchange ratios between British Pounds and the

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various goods. **Oh, Jack Daniels is worth about £15 isn't it?** A good quality ballpoint pen is worth maybe £8. An A4 notepad is probably around £3. A scientific calculator is maybe £30-40. Take a look at the ratios between these prices. Do they correspond to the ratios you established in the first part of the challenge?

Discussion

The point of this is to highlight that the value of modern currency cannot be thought of independently of the economy and people it is connected to. There is nothing about a British Pound *in itself* that can tell you how many pens it is worth, but once it is installed at the centre of a giant interconnected social network of goods and services, its value gets locked in – at least in part – by that **positioning**. It becomes like a hub connected to millions of **spokes**, serving almost as a **routing** mechanism between them. It cannot exist without them, but also gets much strength from its centrality.

Consider this statement: **'If bread is worth £1.50 then I'm certainly not paying £10 for a cup of coffee.'** This emerges not from any comparison between Pounds and the goods, but from a known relationship between bread and coffee, expressed via Pounds. In theory then, whether we start off by pricing coffee as £2.50 or £250 doesn't matter. The absolute numeric value in itself is arbitrary. What matters is whether that in turn plausibly corresponds to the prices of other goods.

The tendency to fetishise the numeric value is one reason why some people fall into the trap of thinking that because 1 British Pound is worth 173 Japanese Yen, the Pound must therefore be worth 'more' than the Yen. All it really means is that the starting point of measuring goods in the different countries is different, and when you first arrive in a foreign country, you have to learn the dynamics of the measuring system before you can start to measure goods in it. Thus, in much the same way that choosing to measure something in millimetres rather than centimetres will give you a higher number, the shirt you buy in Japan will display a higher numeric price, but **relative** to other goods in Japan may present a picture very similar to that in the UK.

Different currencies thus have different baseline **price levels**. The concept of 'inflation' refers to a general change in this baseline, one in which the measurement units become smaller over time, while the ratios between the goods being measured might stay roughly the same. Thus the ratio of £1.50 to £2.50 for bread to coffee becomes £3 to £5 over time. Societies that uphold any currency seem to accept the gradual overall shift as normal, provided it doesn't destabilise the intricate network of relative prices anchored and enmeshed in popular consciousness (most contentious is normally the wage prices that have an unfortunate tendency to stay fixed while overall goods prices rise, leading to worker outrage).

Exercise No. 2: Treasure Island



Some people get concerned by the lack of intrinsic value in the fiat currency described above (**it's not backed by anything!**) and instead advocate commodity-based

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currencies, currencies that are supposed to be valuable in themselves. Gold is the traditional candidate for this, so here is a simple thought experiment to shake up some preconceived notions about the shiny metal.

The setting

Imagine a large island. It has a sizable population, perhaps 50 000 people, but it's extremely remote and cut off from any trade or contact with the outside world. There is a rich agricultural system built on fertile volcanic soils. There is a good source of energy in the form of underground coal mines. There are ample building materials in the form of timber to build houses. These resources form the basis for a vibrant island economy.

It also so happens that once upon a time, a Spanish raider ship full of gold pieces got blown off course and floated for months before being wrecked upon the island, depositing its a huge stash of treasure. A hundred years later and these gold doubloons have come to form the basis of an island monetary system. They circulate in everyday trade, but a sizable percentage is held by a handful of powerful barons who mostly hoard it in hillside bunkers on the central volcanic cone that overlooks the island.

The scenario

One day the island is hit by a giant hurricane and a tidal wave. 80 percent of the fertile topsoil is washed away, or else soaked with saline water that crops cannot grow in. The coal mines are flooded too, making them largely inaccessible. The trees are broken by the winds. In short, the basis for vibrant economic production is decimated. People are forced to eke out a rough subsistence foraging, or take to the seas in flimsy rafts hoping to find new lands far away.

The powerful barons though, still have their fortified bunkers full of gold on top of the hills.

A question, then. Are the barons still wealthy?

Discussion

The point of this exercise is to pinpoint where you think wealth is found in society. It is often claimed that gold is a 'store' of wealth. In the aftermath of such a storm though, sitting atop the hill, one wonders in what sense any value is stored in the pieces of inert metal that have no immediate utility to the barons. The barons can try to exchange their gold for things, but given the context, are people really going to give away their few precious useful items for pieces of metal?

For much of history, gold has not had much obvious utility value like coal or timber or food might. Ironically, it tends to have most value in situations where it is **exchangeable**, and it is only exchangeable when there is a general surplus of goods that people need to exchange, and a process of mystification in which elites have imbued the metal with a god-like cultural status. This observation was very apparent to the likes of Adam Smith, who, in *The Wealth of Nations*, noted that:

'the poor inhabitants of Cuba and St. Domingo, when they were first discovered by the Spaniards, used to wear little bits of gold as ornaments in their hair and other parts of their dress. They seemed to value them as we would do any little pebbles of somewhat more than ordinary beauty, and to consider them as just worth the picking up, but not worth the refusing to anybody who asked them. They gave them to their new guests at the first request, without seeming to think that they had made them any very valuable present. They were astonished to observe the rage of the Spaniards to obtain them; and had no notion that there could anywhere be a country in which many people had the disposal of so great a superfluity of food; so scanty always among themselves, that, for a very small quantity of those glittering baubles, they would willingly give as much as might maintain a whole family for many years.'

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In other words, according to Smith, gold is only valuable in a society where there already are large economic resources built up. Outside of that context, it's a largely useless decorative item.

Gold thus only 'stores' value insofar as it finds itself within a society that upholds a social agreement that it can be exchanged for goods outside of itself that have actual value. In other words, it **derives** most of its value, or is **imbued** with value (via a cultural-political process of mystification), from being present in situations where there are large networks of traded useful goods and people who require a medium of exchange. In essence it holds a contingent form of latent or potential exchange value. If the social agreement breaks down, or if the underlying goods disappear, the value of gold largely disappears too, or reverts to its more humble 'intrinsic' value of pretty decoration.

To illustrate this once more, let's imagine the scenario in reverse. Imagine years later you find yourself stranded on this island, now long since abandoned and desolate. You stumble upon the bunkers of gold in the hills. Should you be happy? Perhaps, but only if you're able to tap into a larger trade network that exists somewhere outside the island. Otherwise, if you want to re-mystify it, you'd better get to work rebuilding a new vibrant island society so that the gold returns to being a 'valuable' medium of exchange.

Intrinsic value: Utility vs. labour

Gold fetishists frequently reject what I've just said, absolutely convinced that the metal is the ideal form of money because it is scarce whilst having intrinsic value. It sounds superficially plausible, but think about this question: ***What really happens if something is an intrinsic store of value and is scarce at the same time?***

Let's say [rare earth metals](#) for example. Rare earth metals are very scarce, and they are very useful in modern high tech electronics. Does that make them the ideal candidate for being the ultimate form of money? While it's true that they hold value, it's also likely that they would soon disappear out of circulation to be used in the things that we normally use them for, like mobile phone parts. The problem about a scarce commodity that is also very useful is that it generally won't circulate like a currency because people **consume** it.

Gold doesn't suffer from this problem because historically it's not actually been that useful, which is why it can sit in vaults for so long without being sold off for industrial usage. Bitcoin is a more recent example of this, a mystified electronic token that you cannot do anything with **in itself**, thereby making it strangely useful as a potential means of exchange.

Where gold does differ from fiat currency is in the fact that gold requires labour to create (mining). This does give it a psychological edge in maintaining the appearance of holding value in itself (***'We wouldn't be mining this if it wasn't valuable would we?'***). Labour implies scarcity, in that you don't have to work for things that are abundant, and scarcity in turn implies potential for exchange value (sunlight might have infinite use value, but no exchange value because it is everywhere and abundant).

Fiat currency doesn't seem to require labour to create, and yet does this matter? You might say 'the British Pound is backed by nothing', and yet I'm inclined to say 'Well, nothing apart a network of 63 million people in a productive economy who will accept it, a powerful state, and a banking system with a huge vested interest in keeping it that way. Is it really 'weaker' than gold?'

Exercise No. 3: Exiled from Main Street

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Here's a thought-experiment to think about when you're in a confined space with other people, perhaps your office block. Let's say it's a medium-sized building, and you are with 49 other people. For the sake of the thought-experiment, imagine that you have access to a large rooftop space, where there is a rooftop gardening system.

Now let's imagine that – for whatever reason – all your wallets are taken away as you enter the building, that the doors are then locked, and that the building is then cut off from the outside world. You find yourselves trapped in the space for several months without any access to money.

The question, then. Has your wealth disappeared?

Discussion

What has effectively happened in this situation is that you've been exiled from a broader economy, and placed into a much smaller one, consisting of only 50 people and a small set of resources. You thus find yourself in the very situation that many small-scale communities have found themselves in over the course of history.

In the isolated space of that building, your wealth does not lie in your bank account. In the context of being in the same boat together, your wealth lies in the potential resources available, and in the collective labour and ingenuity that people can bring to bear in obtaining them. Perhaps some people in the building put effort into creating water tanks to capture rain, while others work on the rooftop farm. Some tend to those who are sick, and some create entertaining acts to lighten the mood and improve wellbeing.

Collective human labour might be required to get all the resources necessary for the society to survive, but human labour is situated in individual people, and thus informal systems of 'keeping score' emerge in such a society. ***I did the cooking, can you do the washing later?*** This gets called 'reciprocity'. It's the idea that, provided you're able to, you'll pull your weight over time. And if you don't, people will start to get pissed off with you and try to exclude you from the communal resources.

A healthy system of reciprocity tends to both rely upon and create systems of trust (like the way your local pub landlord might allow you to keep an informal tab based on trusting you). If you so wish, though, you can begin to formalise this reciprocity by explicitly writing down people's obligations on a collective ledger or list, perhaps a central whiteboard in the building.

Maybe you can even try to quantify the work done, perhaps in terms of hours. I did 5 hours of work on rooftop farming. I thereby claim credit for 5 hours, and it's written down on the ledger so everyone knows. In essence, that ledger entry is now a ***claim*** on the product of the collective labour of the group. My personal 'wealth' may come to lie in the recognition that others in the building will pay to that claim, and in their acknowledgement that I 'own' it.

Now imagine taking that claim to 5 hours of the society's labour, currently written up on the whiteboard, and writing it down instead on a piece of paper that can be passed around, traded and owned.

Wait a moment, isn't that just normal paper currency?

Exercise No. 4: Cracking the commodity illusion of credit money



Note what just happened in the exercise above. A ledger entry – essentially a claim backed by a community – was turned into an **object** by being written down on a piece of paper that can be owned, and subsequently traded. Our ability to imagine that social (or perhaps political) claim as an object that can be owned, and our subsequent ability to exchange it for an actual good, allows us to imagine monetary transactions as if it were akin to exchanging two commodities.

This imagined physicality of money is perhaps what allows people to believe that it is a 'store of value'. For something to be a store of value it must be physical right? Even the term 'money' sounds physical, a noun used to describe an object, rather than a verb used to describe a process. Here's an exercise to help destabilise that.

The challenge, part 1

Try to become aware of every time you mention the word 'money' in conversation, in thought, in emails, and in general.

Now, try to not use the word 'money' for a few days. Instead, every time you're about to say it, insert into its place a description of its **form**. For example, when you hand over coins at a store, ask 'is this enough little pieces of metal?', and when you're paying by card, ask 'do you accept these electrons, travelling through wires?' You'll see the cashiers looking at you strangely, because in some sense you're breaking a taboo by drawing **too much** attention to the material form of the money.

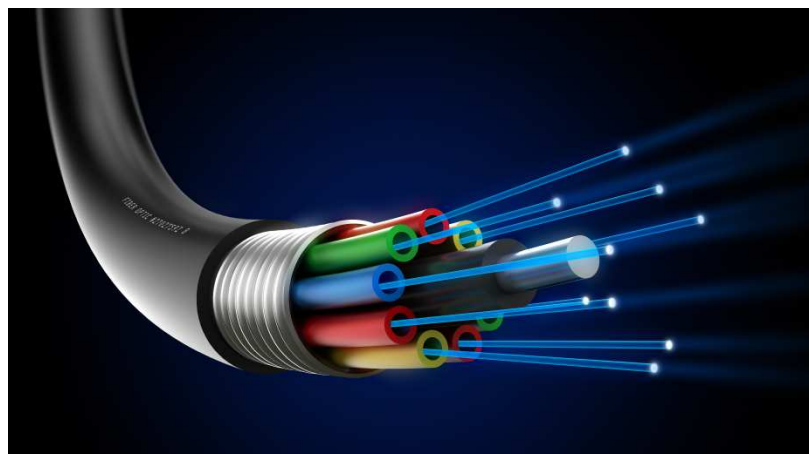
The challenge, part 2

Now move to a description based not on money's physical manifestation, but rather on what it can achieve. Regardless of your perception of what money is, we know that you can use it to **claim goods and services within a certain geographical boundary**. You go into a shop, take out a note, and claim a sandwich, and in so doing pass the claim to someone else.

So try this for a few days. When you see a person driving in a Lamborghini, and you're about to say 'that person must have loads of money', you instead say 'that person must have loads of claims on goods and services'. When you're borrowing cash from a friend, say, 'hey, do you have some claims on goods and services I can use?' It sounds a bit silly perhaps, but the words are breaking away from the physical form, and instead referencing money to things external to itself. In so doing you are actually pointing out its position in the centre of a socio-economic network.

Of course, you don't want to have to say 'claim on goods and services' all the time. I rather use the acronym COGAS ('Claims On Goods And Services'). COGAS-UK is what I use for British Pounds, meaning 'claims on goods and services within the geographic boundary of the United Kingdom'. It's a claim I can use to draw on the productive power of the 63 million people who accept it. This might seem like a fairly small action, but naming money differently helps you to become aware of the immense cultural and political system that underpins its value.

Exercise No. 5: Fractional electronics



There's one big elephant that's left in the room. All the above exercises are aimed at trying to focus in on what money might be to us. This though, is a different question to how money is actually **created** in modern society. The question 'how is money created' is different from the question 'what is money', in much in the way that the question 'how is art created' is different to 'what is art'. Monetary reform groups like [Positive Money](#) deal with the question of 'how is money created' rather than 'what is it', and this is a deep political issue. I left this for last because it's often an issue that distracts people from thinking about the more basic social nature of money, which is required before the creation process can occur.

This exercise really just involves reflecting on three questions:

- 1) What form does the money in your bank account take?
- 2) If you were really depositing it into the bank so that they can then lend it out to others, how come it's still there for you to get?
- 3) If the bank suddenly took it away from you, would you have legal recourse against them? (e.g. if you woke up to find that Barclays had eliminated your bank account and the money in it, would you be able to sue them?)

Discussion

The money in your bank account is electronic money, which is to say that it is simply a ledger entry stored in the huge datacentres of commercial banks (imagine huge excel spreadsheets recording account numbers and how much is attributable to each one). They could do the same thing in a [giant book](#) if they wanted to – and that is what banks used to do – but electronic ledgers are more efficient, a digital equivalent to the clerks who used to carefully write down how much people deposited, and how much was given out to those who the bank granted loans to.

Now to the second question. Textbooks often claim that banks take deposits and then lend them out to people, but if that were entirely true then your deposits would not be sitting there waiting for you would they? How is it that you can have access to your money when it's ostensibly being lent out to others?

This is where we get into the realm of [fractional reserve banking](#), the process whereby commercial banks take the base money created by the central bank (technically called M0, which includes the physical cash you may carry around) and amplify (or multiply) it by extending credit greater than the initial deposits they're given, thereby creating new money that exists nowhere else except as an entry in their accounting system (technically called M1-M3). Indeed, electronic money does not exist outside of the banks' IT systems, but it is the main form of money we use in society, claims which can be passed around, but that cannot leave the system.

Sometimes people are bewildered by the notion that 'commercial banks create money'.

It seems to make it sound like they can create it and destroy it at will. If you have money in a Barclays account though, recorded as a data entry in their IT system, they cannot just take it away from you. It might have originally been created via the process of bank lending, but once it's released as a legal claim into society, it cannot just be destroyed, any more than an artist can suddenly make an artwork disappear once you've got it hanging on your wall. There is a legally-backed reality to the money once it's created, and this provides a check against complete surreality of the money supply.

The fundamental nature of the claim that you now own is precisely what we've discussed in the earlier sections – a social claim that has value insofar as people will accept it in exchange for goods and services. This would not be any different if the government or god or your neighbour George was creating the money. The politics of fractional reserve banking sometimes get cast as questions about the fundamental nature of money, but to me they are actually questions about whether letting private banks be primary creators of that money is responsible or fair, whether it will eventually undermine faith in currency, and whether it confers on them too much political power.

Red pill



You're in an electronic money world largely existing in the data centres of commercial banks, and held in place by collective consciousness and power. Whether you think there is anything wrong with that is really dependant on your view of reality. If you truly do believe that money is 'supposed' to be gold, and if you truly do believe that only gold has 'intrinsic' value, then you're likely to shit yourself at the prospect of modern money. On the other hand, if you like me see money essentially as having always been a strange, somewhat irrational social contract, your mind should rather move to the political and psychological tradeoffs involved in different forms and creators of money, and the economic distribution effects of different variations on the monetary theme.

Further reading


I hope these exercises have been useful, even if you don't agree with my conclusions. If you want to go further down the rabbit hole, here is some potential further reading.

My piece [Riches Beyond Belief](#) in Aeon Magazine was pretty popular and generated a lively discussion. It explores alternative currencies, and what they reveal about normal currency. If you want to look at how Bitcoin interacts with modern money, and the politics around that, check out my piece, [Visions of a Techno-Leviathan: The Politics of the Bitcoin Blockchain](#), which has also been pretty well received.

For some serious reading, check out David Graeber's [Debt: The First 5000 Years](#). It's on its way to becoming a monetary classic. It's very good at obliterating classical economic myths of barter as the origin of money, and pointing out the deeply intertwined relationship between money, debt, and money-as-debt. Adam Smith is the founder of the outdated myth of barter that Graeber dismantles, but it's worth delving into Book 1 of the *Wealth of Nations* to see his ambiguous treatment of gold as

money, at once admitting that it's a construct whilst trying to simultaneously claim that it actually is a bearer of intrinsic labour value. Another classical take comes from Karl Marx, who carries forward some of Adam Smith's theories of commodity money in *Capital* (check out Ch.1), but who gets more sophisticated by pinpointing how the money form is locked into a network of other goods, and elevated by them, taking on a certain mystical status.

From that point monetary theories have abounded, but I'd recommend trying to read anthropologists and psychologists rather than the bland rationalistic explanations of the mainstream economics profession. Above all though, the real red pill takes the form of undertaking your own explorations of money, exploring its orthodox and unorthodox forms, and cracking the deceptive shell that society cloaks it in.

Posted by Brett Scott at 21:28 

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Labels: [Alternative Currencies](#), [fractional reserve banking](#), [Gold](#), [Understand money](#)

9 comments:



Ralf M 18 July 2014 06:21

Very nice article. I was just commenting recently that most of us don't really understand money yet – it's still too new an abstract concept for humans. Compare financial sense, for example, to the intuitive understanding we have of flight trajectories when catching a ball thrown to us. The exercises described below look like they'll get us closer to such an understanding. Thanks for sharing your thoughts.

Reply

Replies



Brett Scott 21 July 2014 11:35

Great, glad you found this helpful Ralf

Reply



wany_hope 23 July 2014 17:26

"Fiat currency doesn't seem to require labour to create, and yet does this matter?"

It does. Human interactions on the market resemble that of physical interactions between inanimate objects in a lot of ways. Gold as money is a rock at the bottom of a hole compared to fiat currency being a rock balanced on top of a pole. The first is naturally stable, it takes great deal of precisely directed energy to push the rock out of the hole, even powerful random natural events won't do it. The latter takes energy and resources to just keep it the way it is (government has to take resources out of society in order to maintain acceptance of fiat currency) and it takes far smaller external force to destroy the balance.

Intrinsic value of gold (and bitcoin) as money comes not from its decorative uses as precious metal, but from the fact it takes effort to introduce more of it to the system. This property is of great value, because trade happens not only on geographical distances, but more importantly also on time distances. Fiat currencies, especially in electronic form, have advantage over gold (but not bitcoin) as medium of immediate claim on goods and services, however because they can be created at will and in not really predictable quantities the time distance between creation and realisation of a claim works against fiat and in favor of gold.

Reply

Replies



Brett Scott 23 July 2014 17:35

"Intrinsic value of gold (and bitcoin) as money comes not from its decorative uses as precious metal, but from the fact it takes effort to introduce more of it to the system" So you subscribe to the labour theory of value then? (this is not a loaded question - just interested)



wany_hope 23 July 2014 21:06

The labor theory of value I've heard about is complete nonsense, so my answer would be no :o)

Back to gold. The fact that you need to use various resources to get it, two of which are inherently rare (time and human work) means that one of important properties of gold - relative scarcity - will not suddenly be removed. This in turn adds to market stability with gold as money and makes sure natural time preference of market participants is undistorted.

Bitcoin is even better than that because while gold is plentiful in the universe, we just don't have ways to get it yet, math guards scarcity of bitcoins (even quantum computers won't break it).



Brett Scott 24 July 2014 12:18

Actually, you seem to be articulating a labour theory of value. I.e. you claim gold is valuable because it requires human work and time to obtain. That is the labour theory of value. Even the concept that something is valuable simply because it is scarce implies a labour theory - i.e. scarcity implies labour required to obtain something (rather than abundance which implies no labour required). Loads of people in the Bitcoin community have recently been implicitly using labour theories of value to justify the value of Bitcoin (i.e. 'the mining power required is what protects the system's value' etc)



wany_hope 24 July 2014 22:09

No, no, no.

I'm not an economist so I might not use all terms properly.

As far as I know central to the labor theory of value is the assumption that there is a strong tie between total amount of labor required to make something and its value. I don't subscribe to such point of view. At best labor is one of multiple factors that shape minimum cost of making something. Cost and value are two different and largely unrelated things.

I recognize three different definitions of value, each has its uses depending on what aspect of the market is considered.

First - philosophical - is that value is a time/situation dependent assumption of individual about their relative desire to possess something/to receive some service. It is important to notice that most of human interactions (including trade) don't involve money therefore broad definition of value is needed to capture that. That definition is also used to justify why trade happens in the first place - both sides of the trade have to value certain things differently or otherwise there is no incentive to trade at all.

Second definition is more practical - value as a function of trade.

When trade happens it "establishes" relative value of traded things. This is where money come in handy - it quantifies value defined this way in form of price. While more practical, it is important to remember that this definition is much narrower than previous one and therefore is not suitable to all things of value.

(... meh, 4k character limit)



wany_hope 24 July 2014 22:14

(...cont)

Third definition - value as a function of utility. It is f.e. used when new products are to be introduced to the market. Producer needs to assess cost of production as well as utility value of their new product (how useful it is likely to be for customers) in order to make sure their own valuation is going to be lower than their customer valuation and with necessary margin to cover risk and opportunity cost. Again it has to be noted that utility is relative. F.e. big factories "agreed" to pay for their CO2 emissions - for them its value is negative. On the other hand in certain types of agriculture farmers pay for installations that increase amount of CO2 in the atmosphere, because it helps to grow more plants faster. For them CO2 has positive utility value (they would welcome "global warming" because they wouldn't have to pay for making their own locally).

Back to gold. Labor does not give it value as money. It only protects one of its important properties - scarcity - from arbitrary change. Imagine two SF scenarios. First - we have the technology to pump gold from Earth's core at almost no operational cost, however the cost of installation is prohibitive. FED decides to print 10 trillion \$ and pays for such pumping station. The gold is as rare as it was before, it has the same physical properties, the labor that was required to mine gold that was already mined cannot change. The only thing that changed, even before FED starts pumping, is the fact that now there is market participant that can change relative value of all the gold in circulation and that his decisions are not market driven as they would be if FED still had to mine the gold traditional way. Just that fact would drive the value of gold down to its utility value as industrial/decorative metal (probably not in span of days but such downward force would exist). Imagine scenario number 2. We have technology that allows production of gold from free energy (matter replicator). It makes gold potentially abundant. However the same technology allows us to produce much more valuable antimatter (let's say it is needed as a dense storage of that free energy), so it makes no sense to waste productive capacity on shiny metal. Such technology wouldn't change value of gold until machines used in production were so cheap and plentiful that people could produce just about anything with them. That would be time of gold losing its value however it would not matter - who would need money in such environment?

And one more thing about Bitcoin. When it was young you only needed Ghash power to mine BTC reliably, now it is in range of few Phash. It didn't require any actual investment back then, only to take some not too great risk, some knowledge. Yet the value of old bitcoins is just the same as new ones or the ones that will be mined in two years. The protocol is designed this way that no matter how much actual computational power you have and how much resources you gave up in order to get that power you can only mine so much BTC until you drive up

difficulty. All that matters is your power in relation to overall network power. In a sense the more "labor" you put into mining bitcoin the less you can mine (in terms of marginal cost).

Reply



wany_hope 23 July 2014 21:05

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